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I, A. G. Leelakrishnan, hereby declare that the particulars given above are true to the best of my knowledge and belief.

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LEUKAEMIAS AND CHEMOTHERAPY

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The lime light was focussed on leukaemia after the atomic bombing of Hiroshima and Nagasaki when enormous numbers of men, women and children became victims of this blood disease in various forms and grades. Extensive work was done by the American Army Medical Corps and the Japanese team. The disease was studied in all aspects of enzyme and cellular chemistry and pathology with the added advantage of electron microscope and progress in genetic studies. So a new angle in the concept of aetiology and histopathology and therapy was brought into prominence.

Apart from these, the incidence in this disease has become more and more since the last decade and half, not only due to its awareness in the medical profession, but also due to greater circumstances of radiation hazards supposed to be responsible.

This was reflected in the Government General Hospital statistics that the incidence from being 6 or 8 per annum in 1950 has become 40 to 66 in 1960.

Taking our Government Erskine Hospital statistics for the last six years, the incidence is as follows:

Year	Acute	Myeloid	Lymphoid	Indefinite	Total	Male	Female	Child
1957	—	8	2	—	10	8	2	—
1958	2	18	2	1	23	18	5	2 m.c.
1959	3	7	3	13	26	17	9	3 2 m.c. 1 f.c.
1960	5	13	—	1	24	14	10	3 2 m.c. 1 f.c.
1961	—	10	3	12	25	18	7	2 f.c.
1962	—	9	1	12	22	15	7	2 1 m.c. 1 f.c.

Leukaemia is a disease probably of neoplastic nature characterised by a widespread and abnormal proliferation of the leucocytes and their precursors throughout the body especially in bone marrow, spleen and lymph-nodes. There are different types of leukaemias, differentiated mainly according to the predominant abnormal cell forms. This disorder may vary from an acute disorder to a chronic one. The termination, however, is always fatal.

Knowledge of leukaemia can be traced to as early as 1839 when Donne made the first microscopic observation. It was Virchow who first recognised the cells as being leucocytes and described it as a disease entity. He gave the name leukaemia to this disease in which he noted the blood of the patient comparatively whitish in appearance due to a marked increase in the leucocytes. He also distinguished a lymphatic and a splenic type of leukaemia.

With Ehrlic's blood staining methods, in 1891 myelogenous form was recognised by Neumann as being the same as Virchow's splenomegalic type. Acute leukaemia was recognised by Von Freiedreich and Ebsteion. In 1900 Naegli described the myeloblast. In 1913, Reschad and Schilling described monocytic leukaemia. Since then variations from the classical pictures have been recognised and methods for their palliative management have been developed.

Varieties of Leukaemia and their Incidence :

Acute and chronic forms can be distinguished on clinical grounds as well as on the basis of the predominant abnormal cell picture. Acute leukaemia without treatment is fatal in 6 months and in chronic leukaemia it may be 3 to 5 years and rarely 10 years or more. Subacute leukaemia is not truely intermediate between acute and chronic. Here the picture resembles those of acute form, but the progress of the disease is slower. Aleukaemic or subleukaemic leukaemia refers to cases in which the cell count is within normal limits, but the blood picture is abnormal. Some workers define aleukaemic leukaemia as a prior step to subleukaemic leukaemia, i. e. the cell count is normal, the peripheral blood smear is normal, but the marrow puncture will show predominant immature blast cells.

Chronic myelocytic and chronic lymphocytic leukaemia incidence are almost equal. The chronic leukaemia is twice as common as the acute leukaemia. Leukaemia is the common cause of death and death from leukaemia is 3·6% of all malignant diseases.

Age and Sex Incidence : Myeloid and monocytic leukaemia are equally distributed throughout life, the lymphoblastic type occurs in the younger age group around 3 years, whereas the lymphocytic type occurs in the older age group. Acute leukaemia is much more common before the age of 25 years. The sex ratio is 3 male : 2 female in the chronic variety, whereas it is almost equal in male and female children in the acute variety. The incidence of leukaemia is higher in urban than in the rural population.

Hereditary and Familial Influence :

Chronic lymphatic leukaemia has been reported in the families of Russian Jews settled in the States but less so in the myeloid. Susceptibility to experimental leukaemias in and transmission of the spontaneous disease in experimental animals follow definite genetic laws.

Etiology: The cause of leukaemia is unknown. The febrile character and increase of leucocyte count lead some to believe it to be of infective origin, but the fact that the other laws of infection like Koch's postulates cannot be demonstrated in the normal way, lead to the disapproval of this view.

The widespread proliferation and turnover of immature cells which are useless to the host lead others to put up the neoplastic theory, with widespread infiltration into almost every tissue simulating secondaries.

A hormonal theory — the hormones like lympho-and myelo-kentric factors were thought to be responsible for maturation and to be imbalanced and responsible for this process, but this did not find any support as it could not be substantiated by other workers.

Issac in 1930 reported chromosomal abnormality in the form of Haploidy. This chromosomal changes may follow x-ray therapy in man and may accompany viral or chemically induced animal leukaemia. The disturbance in genetical location as in mongolism (Down Syndrome) was also found associated with acute leukaemia.

The precursors of D. N. A. like Thymidine - di - leucine and Phenyl Allenine are incorporated by the leukaemic myeloblasts at a much slower rate than the normal leucocytes. So this will reflect an increased turnover of larger quantity of cells with a subnormal rate of mitosis, i.e. in immature state.

Certain abnormal concentration of various free amino-acids like glutamic acid and O. Phosphoethanolamine were abnormal in concentration in all leukaemias.

Leucocyte glucogen was below normal in lymphoblastic leukaemia and increased in chronic lymphocytic leukaemia.

The carcinogenic theory of Warburg is questioned because the studies on leucocyte glucolysis show that aerobic glycolysis in leukaemic lymphoblasts and lymphocytes are lower than that of normal or even leukaemic granulocyte.

Vitamin rich tissue extracts favoured leukaemia as the deficiency was responsible for pernicious anaemia. Treatment of this anaemia with folic acid lead to leukaemia – and this lead to the discovery of anti-folic acid therapy in leukaemia.

Acute leukaemic cells contained more folic acid than the normal mature leucocytes. Serum B_{12} was increased in myeloblastic and chronic myeloid leukaemias. Riboflavine was increased in the serum of myeloblastic leukaemia. Thiamine utilisation was faulty. Serum and cellular ascorbic acid content was low in all leukaemias till remissions occur. Pyridoxine phospholase was decreased in all types of leukaemia.

Enzymatic Theory:

Plasma-lactic dehydrogenase, phospho-hexose isomerase, riboneucleosidase, glutamic acid dehydrogenase and glutamic oxolactic transaminase were all found to be elevated—more so in acute leukaemia. The S. G. O. T. level in plasma will be increased wherever there is tissue destruction. Increased anti-chymotrypsin and decreased anti-renin is said to reflect the acuteness of a malignant disease and so also in leukaemias.

Tracer metals used in this study were found as follows: Plasma magnesium and chromium were

normal where as copper was increased and nickel was variable. Zinc was decreased in all types of leukaemia.

Cellular enzyme — alkaline phosphatase is decreased in chronic myeloid leukaemia, but not in acute leukaemia. Cellular histamine content was high in chronic myeloid leukaemia, but not in acute leukaemia.

Immunological study is inconclusive.

Clinical allergy — inconclusive.

Available information on leucocyte study suggests that the cells in acute leukaemia are not characterised by uncontrollable proliferation, but are sluggish in metabolism and reproduction. The stage at which the maturity is lost for the cells is variable.

Evidence for Viral Theory of Ellerman:

Virus theory of Ellerman and Bang was revived by Gross and Schwartz in 1908 by giving evidence that virus from lymphoblastic and myeloblastic tissues can produce leukaemia in the mouse. Human leukaemic brain tissue is used for this. Electron microscopic study of this leukaemic tissue extracts was found to contain a large number of small particles which are not ordinarily found in the normal leucocytes. And these particles are suspected to be virus.

If leukaemia is transmitted by virus, then it is probably a virus carried by a large segment of the population and is only vertically and not horizontally transmitted. Some events probably a co-carcinogen is responsible for initiating the viral activity and leukaemia is the result of cellular reaction. By the term vertical transmission of a viral infection it is meant that the infection is carried from the parents to the offspring in the germplasm and horizontal transmission means that the infection is spreading from one person in the same surroundings.

Dietry influences on leukaemia were not substantiated. The incidence of leukaemia seems to be increasing over and above what might be expected in a more aged population with better diagnostic facilities, but the incidence in children is supposed to be decreasing and is attributed to environmental factors.

Clinical Manifestations:

Patients with lymphoblastic leukaemia have a shorter history than the patients of the same age with the myeloblastic type.

1. Fatigue, irritability, lack of pep and lethargy is the most frequent early symptom.

2. Fever, purpura, bone pains and enlarged lymph nodes were noted more frequently in the lymphocytic than in the myeloid type. Lymph node enlargement is a very late phenomenon in myeloid leukaemia.

3. Complaints of sweats and painful hypertrophy of the gums are rare, but more in myeloid than in lymphoid. Gum hypertrophy is more in monocytic than in myeloblastic type.

4. Weight loss in 50% of the patients. The growth, however, is not affected much in children and the leukaemia is supposed to be of a lesser grade of nutritional parasite than the other types of malignancies. The duration of the symptoms bear no relation to the severity of the leukaemia.

5. Some of the less common symptoms are non-specific gastro-intestinal complaints.

6. Nonspecific rashes, puffy eyes, enlarged tonsils, sore tongue, lumps in the breasts, swollen testes, dysuria, bright rectal bleeding like hæmorrhoids, dysphagia, hæmorrhage into the anterior chamber of the eyes, parotid enlargement, traumatic subdural hæmatoma and various neurological deficits either due to myeloid infiltration or thromboembolic manifestations, leukaemic pneumonias and effusions and pathological fractures are some of the rare atypical manifestations of leukaemia. The clinical symptoms and signs depend upon the site and tissue affected by the leukaemic infiltrations.

7. Blood picture depends on the stage of the disease. Blood count most often ranges between 1 to 5 lakhs, but anything above fifty-thousand with immature cells in the periphery is diagnostic. In acute and sub-leukaemic leukaemias, the cell count may be 10 to 20 thousand, but more than 30% of the peripheral blood smear will reveal immature blast cells. The lymphocytic and monocytic types will have lesser total counts. D. C. shows a predominant shift to the left. The degree of anaemia is an index of the extent of the leukaemic process. In the early stages there is no anaemia. The platelets are decreased in the terminal stages, but normal or increased in the early phase.

8. The blood picture is of a monotonous cellection of small lymphocytes each looking just like its fellow contrasting strikingly with the colourful picture of myelocytic leukaemia.

9. The skin manifestations are :—

(i) Itching and burning sensation in the sensory nerve endings.

(ii) Mycosis fungoides which is nothing but an ulcerative collection of leukaemic infiltrated cells.

(iii) Herpes zoster is the forerunner of leukaemia and other malignancies in the older age group.

10. Hepatosplenomegaly - produces less discomfort to the patient compared to the size. It only increases the abdominal girth. Splenic infarcts can be demonstrable in some cases.

11. Functional impairment of the liver and spleen are usually rare. Jaundice due to the infiltration-obstruction of biliary passages are reported.

12. Sternal tenderness is usual, but frequently not mentioned by the patient.

13. Tonsils, lymphnode enlargement in the eustachian tubes, adenoids and nasal obstruction and mediastinal involvement are common in the lymphocytic type.

14. Exophthalmos due to chloroma in myeloid leukaemia in the orbit are rare and evidence for acute myeloblastic type should be looked for.

The less common types of leukaemia are: (1) aleukaemic or subleukaemic leukaemia, (2) monocytic leukaemia, (3) lymphosarcoma cell leukaemia, (4) plasmacell leukaemia, (5) eosinophilic leukaemia, (6) basophilic cell leukaemia.

Diagnosis :

The diagnosis of leukaemia is not difficult, but the classification into the lymphoid or myeloid varieties in the acute phase may be difficult. Use of special staining techniques with P. A. S. (Periodic Acid Stain) method will stain the granules in the myelocyte dark and the lymphocyte, due

to the absence of granules, will remain unstained and is called P. A. S. negative. This, however, may not be easy in the blast stage when the appearance of the granules in the myeloid cells is almost nil or scanty and the type is decided by the company the blast cells keep.

Hematopoietic responses simulating leukaemia are met with in a variety of conditions when it is called leukaemoid blood picture. The conditions are :

(1) Infection with pneumococcus or meningococcus and rarely in diphtheria and T. B. produce the myeloid type.

(2) Whooping cough, infectious mononucleosis and chicken pox simulate the lymphocytic type.

(3) Intoxications rarely in eclampsia, severe burns, diabetic acidosis and mercury poisoning.

(4) Malignancy especially in bone metastasis, in multiple myeloma, hodgkins and myelosclerosis.

(5) Severe haemorrhage and rapid destruction of blood.

Leukaemid is the term applied to the innumerable nonspecific rashes, haemorrhagic lesions or other skin lesions like exfoliative dermatitis not directly attributed to leukaemia. The uric acid excretion is high due to high nucleic acid metabolics, but the incidence of gout is rare. Due to increased cells, the B. M. R. is high.

Investigation :

1. T. C., D. C.
2. Marrow examinations.
3. X-ray examinations, revealing subperiosteal infiltration, osteolitic or tumour like changes.
4. B. M. R.
5. Estimation of uric acid.
6. Where facilities are available, enzymatic assessments which are more of an academic rather than of any clinical interest.

Course and Prognosis :

The disease is invariably fatal. About six months life span in acute cases and 3 to 5 years in chronic cases; with remissions and with treatment life may be prolonged upto 10 15 years.

Treatment: May be divided into :

1. Prophylactic
2. Specific
3. Supportive

Prophylactic Therapy :

Since radiation hazards are found to favour a greater incidence of leukaemia, this should be avoided wherever and whenever possible. The indiscriminate x-ray study of a pregnant woman to assess the lie of the baby makes the baby a potential leukaemic. X-ray and radium workers should be adequately protected as per international code. In atomic bombing of Hiroshima and Nagasaki, it was found that the greater the vicinity of the people after the destruction zone, the greater was the incidence of leukaemia. So the advent of nuclear power to be utilised for peace and war should be adequately screened off and disposed as per international code.

Fabre and Kristine Borum have reported that patients treated with irradiation for malignant diseases developed leukaemia if they lived for 7 years and more after x-ray therapy. Intermittent irradiation with radioiodine for thyrotoxicosis has definitely not been leukomogenic.

Specific Therapy :

Although the cure of leukaemia has not been achieved as yet, present day methods provide a considerable improvement and reduce the morbidity making life more comfortable for the patient.

The specific treatment may be by x-ray or by chemotherapy.

(i) *Irradiation :* Paradoxically enough the condition which triggers up the disease is a useful therapeutic agent in the hands of the radiologists.

Serial daily doses of 100 to 200 r or as little as 25 to 50 r appropriately filtered and used over the specified areas of activity of the disease in the bone till the T. C. falls to 25000 in chronic cases. But even in cases with initial leucopenia, continuous x-ray therapy was found to be useful. But this should not be employed for acute or sub-leukaemic leukaemia.

Treatment with P^{32} is also used and has the advantage that the radio active material is concentrated in the position where it is especially required like liver, spleen, kidney and bone marrow which are rich in the phosphorous content and metabolise P^{32} rapidly. This has the advantage over x-ray in that it does not produce radiation sickness, but is not available at present in India.

(ii) *Chemotherapy :* Besides being less expensive than x-ray therapy, it makes the treatment and management available to the patient at his residence. A variety of chemotherapeutic drugs are now available which can be taken orally. Often both irradiation and chemotherapy are required at different times in the same individual. Then the disfiguring and uncomfortable adenopathy or great splenomegaly may call for local Roentgen therapy whereas the systemic manifestations are well tackled by chemotherapy or the phosphorus.

Nitrogen Mustard was used at the rate of 0·1 mgm per kgm. body weight. The distressing symptom of vomiting associated with it rendered that drug unsuitable for domiciliary treatment.

So this has given place to cyclophosphamide sold under the patent name of Endoxan Asta and is available as 200 mgms ampoules to be administered I. V. and as 50 mgm. tablets. 200 mgm. a day should be given orally for 3 weeks or till the blood count comes down to normal. This has no undesirable side effects but various workers in India and abroad have given contradictory reports as to its efficacy. In our unit at the Govt. Erskine Hospital, it was found to bring down the cell count to near normal limits, but soon the count relapses to its original value if the drug is stopped. It was noted that there was no shrinkage of the lymph glands nor of the spleen. But if the Asta therapy is followed by irradiation for about 2 months over the spleen or glands keeping a watch on the cell count and haemoglobin, there is regression of the enlarged lymph node or spleen with improvement in the cell count and in the clinical picture.

Triethyl Melamine : (T. E. M.) is similar to nitrogen mustard in the pharmacologic effects and can be given orally in doses of 1 to 2 mgs daily for 2 to 3 days, waiting there for the blood count for 2-3 weeks and to resume after that if necessary. Since it has a cumulative effect and it is a powerful haemopoietic depressant,

it should not be given continuously for a week or so, as the changes become irreversible. This is used preferably for the lymphoid leukaemia and not for the myeloid. The oral administration does not produce any gastro-intestinal symptoms. Usual total dosage is 5 to 10 mgms in a course. The drug is best given in the morning on awakening along with 2 gms. of soda bicarb. Breakfast may be taken 2 hours later.

Myleran: This is a most useful drug in chronic myeloid leukaemia. The oral dose is 4-6 mgm daily till the T. C. comes down to 10,000 per cml. It has very little gastric discomfort. Thrombocytopenia and purpura are the chief toxic symptoms. Remission is measured in months.

Leukeran: Is useful for lymphoid leukaemia on the same lines, i. e. 0·1 mgm. per k. g. per day orally.

Demicolcin and Colcemide: This is given in doses of 4-6 mgm orally for chronic myeloid leukaemia. The relapse occurs promptly unless the drug is continued.

Urethane: 1-6 gms daily orally is useful in chronic myeloid leukaemia but is less effective than myleran. Nausea and anorexia are the side effects. The total amount of drug required is about 150 gms. and a smaller amount 0·5 to 2 gms daily may be necessary for the maintenance dose.

The managemet and drug therapy are different in acute leukaemias. In acute leukaemia, x-ray is of no value and radio P^{32} has a limited role and the above mentioned chemotherapeutic agents are of no benefit. On the other hand, the steroid hormones, the folic acid antagonists and antimetabolics like purine are valuable.

Steroid Hormones: Prednisone and cortisone are preferable and they bring about remissions in 2 3 of the cases in acute lymphoid leukaemias in children and in 50% of cases in adults. To achieve this, the dosage of the drug must be high enough to produce hypercorticism-40-60 mgm of prednisone, 100-200 mgm of cortisone. Such a treatment should be supplemented with 2 to 6 gms of potassium chloride daily and the diet must be salt free.

A similar response is not achieved in acute myeloid or monocytic leukaemia. Once a remission is attained the steroid therapy is stopped. The remission may last for several weeks to months. This remission can be prolonged by using folic acid antagonists or purines.

Amithopterin and Aminopterin: These are commonly used in oral doses of 1·25 to 5 mgm. for amithopterin, and 0·5 to 2 mgm for aminopterin. The drug is given until remission is produced or severe toxic symptoms like oral ulceration, anorexia, nausea, vomiting and diarrhoea, alopecia, exfoliative dermatitis and bleeding occurs. Amithopterin with cortisone is used in children.

6. Mercaptopurine sold as Purinethol is useful and is a less toxic drug. It produces remissions of 50% in children and 25% in adults. The dose is 2·5 mgm per kilo body weight orally—60-90 mgm a day. This drug was also found to produce improvement in the early chronic myeloid leukaemias.

These drugs can be given in acute cases after remission with steroids and before early symptoms of relapse occurs.

By a planned alternative use of drugs the development of resistance to one of the above mentioned agents may be avoided or delayed or may be switched over to irradiation.

Supportive Therapy :

The general measures of management are important. These include blood transfusions when necessary especially in acute cases and antibiotics. Good oral hygiene is important as well as a well balanced nourishing diet. Rest and activity should be adjusted according to the morbidity and mental make up of the patient. The patients should be encouraged to maintain their normal activity as far as possible and hospitalisation should be reduced to the minimum.

Surgery :

Splenectomy is the only type of surgery that could be done. But this should be avoided as far as possible unless due to heavy mechanical hindrance to the patient due to the enormous size of the spleen in the myeloid type.

It is also indicated in chronic lymphocytic leukaemia where there is severe anaemia associated with reduced survival time of transfused R. B. C. In these cases the steroid hormones should be given a preliminary trial before splenectomy is considered.

I am thankful to the Principal, Madura Medical College for having permitted me to publish this article.

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CONGENITAL MALFORMATIONS OF THE FŒTUS IN GENERAL PRACTICE *

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> "The true aim of the teacher should be to impart an appreciation of method rather than a knowledge of facts; for the method is remembered when facts have been forgotten".
>
> — *Karl Pearson.*

May I draw your attention to a very morbid subject? A deformed fœtus or an abnormal child is not a pleasant sight for an obstetrician or for anyone to behold. One of my preceptors, Dr. John Howkins of St. Bartholomew's Hospital, a renowned gynæcological surgeon wrote a very important paper on "Iniencephalus" in 1939 and he refers to "the feeling of sqeamish horror among practitioners and the lay public that prompts the rapid disposal of all human monsters without investigation of their morbid anatomy". You should have heard of Ballantyne for it was he who laid the foundations of antenatal care which almost every practitioner has perforce to practice. Writing in 1892 on "Studies in fœtal pathology and teratology", he noted, "it is not an uncommon thing to find that no dissection has been made of these interesting abnormalities. They have been bottled and catalogued and placed upon the shelves of some museums, private or public. Sometimes this even has not been done and they have been either destroyed or kept in the medical man's possession for the benefit of his professional friends alone".

The incidence of fœtal abnormalities in Madras hospitals is 3·8 per 1000 babies born (Sarma 1958). This refers only to major abnormalities usually incompatible with life. Minor abnormalities are rarely noticed, let alone registered. Foulkes and McMurray (1954) are perfectly correct when they state that "major abnormalities which are incompatible with life are all too frequently discarded as monsters and, being of no value clinically, are not reported". In hospitals although these malformations are registered, it is never the less a fact that they do not stimulate much interest or curiosity and many of these are claimed by relatives or are cast away. The exceptional fœtus may be retained because it is so "unusual". Although there has been little interest in the subject, there have been individual exceptions. Our own distinguished Vice-Chancellor, Dr. Lakshmanaswamy Mudaliar, a founder member of the Royal College of Obstetricians and Gynæcologists of England presented at the Seventh Obstetric Congress at Dublin in 1929 a very remarkable paper on "Double Monsters". Although it dealt primarily with anatomical features of these very rare specimens, it was such a valuable contribution to the world's literature that anyone who writes a serious paper on the subject has perforce to refer to it.

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If the incidence of a deformed child is 3·8 per 1000 babies (born after the 28th week of pregnancy), the practitioner surely sees a case off and on. This incidence does not take note of aborted material. Abortion is one of nature's methods to get rid of a malformed conceptus. Hertig and Edmunds (1940) reported that 50 percent of 1000 spontaneously aborted embryos were defective. That means if only the practitioner would be on the look out, he may expect to make remarkable "finds" in such material. Even if he has no facility to study this in detail, he could make a useful contribution to science by putting it in some preservative (formalin) and sending it to one of the colleges where there may be scientists interested in making a study of such material.

For purposes of study such abortus material generally need complicated methods and almost certainly microscopic dissections to make the study a complete one. That does not mean to say the practitioner should not make use of his own powers of observation.

It is not often realised how much contribution to the pool of world knowledge can be made by the method of "observation". Practitioners too often think that research means filling in complicated forms to get a meagre grant and that the work involves complicated biochemical analysis and the use of the most involved statistical methods. This is simply not the whole truth. A simple observation may be of great value. Unfortunately it is not appreciated. Any practitioner with an inquisitive mind could record what he sees. Allow me to quote my own experience of a case.

An impoverished woman, 30 years of age was having her second child. She was severely malnourished and showed clinical evidence of vitamin A deficiency. What is more she was almost completely blind as a result of this (keratomalacia). Although only 28 weeks advanced in pregnancy, her abdomen was larger than it should have been. A mild degree of excess of amniotic fluid (polyhydramnios) was suspected. She gave birth naturally to a premature infant. It was abnormal. It had a small head (microcephaly) and no eyes (anophthalmia). I had read that experiments had been done whereby animals put on a vitamin A deficient diet may produce offspring with abnormalities of the eyes. I marvelled at what I saw. Could this perhaps be an imitation of the experiment in a human being ? I could not get facilities for biochemial studies to determine vitamin A levels in the patient. An autopsy, when the child died subsequently, was not allowed. However, I managed to get a pretty photograph of the mother and child. This case report appeared in a leading obstetric and gynaecological journal in the United States. Commenting on this case report I take the liberty to quote an extract from a letter by Dr. Josef Warkany of the Children's Hospital Research Foundation at Cincinnati who wrote, "This is a valuable case report and may represent one of the few cases in which human conditions imitated animal experiments. Anophthalmos or marked microphthalmos was induced by vitamin A deficiency in pigs by Hale (Hale, F. The relation of vitamin A to anophthalmos in pigs., Am. J. Ophthal. 18 : 1087, 1935). As you know, we have produced many malformations in rats by

vitamin A deficiency. I have been very cautious in attributing congenital malformation in man to maternal nutritional deficiency". Professor Giroud from the laboratory of embryology at Paris and Sir Stewart Duke-Elder, London wished to know if they could use the photograph in their review and book respectively. This little report of a case could have been done by anyone who was interested enough to do it. It required no special techniques except noting the importance of what is before your eyes. I am sure almost every practitioner has had similar experience in different fields of clinical medicine. Although the indigent patient has now hit the world's medical lines, I want you to imagine her cooped up in a dusky corner huddled with her child, the tragic picture of a mother who could not see, who had given birth to a blind child. Neither she nor the child interested anybody; in fact even the fact that the child had no eyes was not registered until the nurse began to worry that someone might suggest later that she was responsible by bad nursing for something to have happened to the baby's eyes and that is how it came to be recorded. Yet if one begins to see too many things and too often, it does not do one too much good in the set up in which research has got to be done at present. The purpose of quoting this case to you is to show that in general practice too such peculiar phenomena may come your way and it is well worth recording. Of course no research committees will come rushing with grants to sponsor such work, but then you will have the satisfaction of knowing you have contributed something worthwhile to scientific knowledge, however minute this may be.

The study of foetal deformities is as old as the human race. According to Pliny, nature creates monsters for the purpose of astonishing us and amusing herself (Council, 1950). In the past the causes for fœtal abnormalities suggested were as many and as varied as the abnormalities themselves. Ambrose Pare (1678) listed many, ranging from God to the Devil, with some science thrown in between. The following passage from his book (Pare A. 1678 – The works of Ambrose Pare. Tr. T. Johnson, London) summarises the ideas of the past ages, and shows clearly how the causal agents believed in at that time could be divided into the super-natural and the mechanical.

"There are reckoned up many causes of monsters; the first whereof is the glory of God, that his immense power may be manifested to those which are ignorant of it...Another case is, that God may punish men's wickednesse, or show signs of punishment at hand...The third cause is an abundance of seed or overflowing matter... If, on the contrary, the seed be anything deficient in quantity, some or more members will be wanting or more short or decrepite...The ancients have marked other causes for the generation of monsters...the force of imagination hath much power over the infant...Monsters are bred and caused by the straightnesse of the womb...by the ill placing of the mother in sitting, lying down or any other side of the body in the time of her being with child...By the injury of hereditary diseases infants grow monstrous, for crooke-backt produce crooke-backt, lame produce lame, flat nosed their like...Monsters are occasioned by the craft and subtlety of the Devil".

At Koyngik in Chaldea by the river Tigris, brick tablets record abnormal

foetus of ancient Babylon. In the early stages of man's history, monstrous infants were deitified and that is probably why many heathen Gods have a teratological appearance. The God Centaur may well have been a cyclothoracopagus monster and Polyphemus, a child with a cyclops malformation. The God Ptah of Egypt may have been an infant with achondroplasia. In the middle ages, congenitally malformed infants, instead of being considered as messengers of the Gods, were looked upon as emissaries of the Devil; and many mothers were needlessly sacrificed with their infants in the belief that they had had evil associations with the Devil. The Spartans threw their deformed children into an abyss near Mount Taygah. The 12th and 13th centuries marked the birth of a more scientific outlook towards congenital malformations. As the centuries rolled by, observers began to record in a picturesque way abnormal forms of human births. Meckel brought out his "Atlas of human abnormalities" between 1817 and 1826. This was followed in the 19th century by St. Hilaire's "Atlas of Teratology". A truly scientific approach to the problem was shown by Ballantyne, lecturer in antenatal care at the University of Edinburgh who published his monumental volume on teratology and antenatal pathology. Since that time our understanding of science has greatly advanced and we know there are several factors which play a part in the aetiology of congenital malformations.

Among the causes of congenital malformations in human beings are teratogenic agents, genetic mechanisms and other factors associated with congenital defect in which the causal relationship, if any, is obscure. Of the possible teratogenic agents may by listed: (1) the virus of rubella, (2) the protozoan responsible for toxoplasmosis, (3) an acute deficiency of folic acid, (4) ionizing radiations, and (5) synthetic progestins. Probably the genetic mechanisms play the most important part and cause the majority of malformations. Of other primarily non-genetic factors associated with congenital defect may be mentioned (Schull, 1961): (a) complications of pregnancy, notably hydramnios and breech presentation, (b) maternal age, (c) birth rank, (d) social class, (e) season of birth, and lastly (f) maternal nutrition.

In the light of this it would be useful when you meet with a foetal abnormality to make a few clinical notes.

Another fascinating aspect about foetal abnormalities is to be able to diagnose them at an early stage. Although various clinical features may lead you to suspect the diagnosis, only radiological studies can help to confirm the diagnosis in the majority of cases. As anencephalus and hydrocephalus are among the most likely malformations you might meet, it is comforting to know that both these can be readily diagnosed on a good x-ray. Another form of scientific curiosity is to make retrospective studies of x-rays. An abnormal child may have been born. The patient may have been x-rayed previously. Get hold of the x-ray and have a good look at it and more often than not you will find that the abnormality could have been diagnosed had only the x-ray been submitted to a more careful scrutiny. Of course you should make an accurate record of the monster as well. If you have no camera, why not make a drawing? Or if you are so poor at drawing that you can't make a simple sketch of it,

why not make a few notes about what it looked like with reference to the different portions of the body ? A collection of such cases can be very useful.

Most monsters can be readily sorted out into its main classes, but the complicated ones can puzzle even the experts. I had a letter recently from a doctor from a maternity hospital at San Salvador in Central America asking whether I would help classify a peculiar monster for their medical school and could they send a complete description and slides of the x-ray films and of the monster. I would be only too happy to sort out any of your monsters for you, if you could send along some particulars. In what form should you send the clinical particulars ?

This was a problem which had worried Ballantyne and he wrote way back in 1892 : " During the investigations of certain examples of foetal disease and deformity, I constructed, for my own use, the following scheme in order that I might be able to record all the important clinical details and pathological characters of each case. It is in my estimation very far removed from an ideal scheme : but since I have been unable to find in any work upon foetal maladies any case taking method described, I have ventured to bring this one forward in the hope that it may prove of some service to other workers in the field of research ". (See page 225)

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CLINICAL HISTORY AND SYMPTOMATOLOGY

A. Maternal

1. General:
   a. Age, development, weight, height
   b. Habits and environment
   c. Constipation
   d. Diseases
   e. Deformities

2. Specific:
   a. Menstrual type, habits, etc.
   b. Marriage, early or late
   c. Morbid states of uterus and adnexae
   d. Pregnancies
      1. Past: character
      2. Present: character, plural, single, etc.
         Symptoms in pregnancy,
         a. Maternal, gastric, renal and nervous
         b. Foetal movements, heart beat, etc.
   e. Labour and puerperium
      a. Past b. Present.

B. Paternal: Health, Constitution, Habits, etc.

C. When the infant is born alive and survives for a longer or shorter time or there are twins one of which lives

D. Family clinical history. Heredity

MORBID ANATOMY

A. Of the fœtus
   1. External appearances
   2. Internal appearances
   3. Sectional appearances
   4. Microscopic appearances
   5. Bacteriological investigations
   6. Chemical characteristics of fluid

B. Of the fœtal adnexa
   1. Placenta
   2. Umbilical cord
   3. Membranes: a. Chorion
      b. Amnion
   4. Liquor amnii

C. Of the mother (if death followed confinement)

I do not think Ballantyne's form needs any very substantial revision and it gives an idea of what a clinical history should contain. In addition to poylyhydramnios an enquiry should be made also of abnormal uterine bleeding in pregnancy; there is a high incidence of fœtal abnormalities in cases of placenta praevia. (Greenhill: 1923, 1939).

ABSTRACTS AND EXCERPTS

PRESENT STATE OF POLIOMYELITIS IN DIFFERENT PARTS OF THE WORLD:

In some parts of the world poliomyelitis has already been completely or almost completely eliminated by mass use of oral poliovirus vaccine. In other parts, where Salk vaccine has been used, but not extensively, poliomyelitis has continued to be a serious problem—in Europe this applies especially to West Germany, France and Italy. In 1960, West Germany had about 3,800 cases, and in 1961 a somewhat larger number. France, which for years has had a low endemic rate—the annually reported cases for 1951 to 1955 varied from 1,493 to 1,834, with a total of 8,160 for these 5 years—has actually had more poliomyelitis since the advent of killed virus vaccine, with a total of 11,132 cases during the 5 years of 1956 to 1960, with 2 high years of 4,109 and 2,564 in 1957 and 1959 respectively. Italy reported 23,895 cases during the 5 years of 1956 to 1960, with 8,198 cases in 1958, and more than 3,000 up to the end of October 1961.

In recent years poliomyelitis has begun to emerge as an epidemic disease of considerable importance in many countries of Asia, Africa and South America, where in the past the infection rate was high and the disease rate low, just as it was in Northern Europe and North America only 40 to 50 years ago. The epidemics in Japan have already been mentioned, and during the recent poliomyelitis conferences in Moscow there were reports of extensive epidemics on the mainland of China and in North Viet Nam. Thus, North Viet Nam with a total population of only 16 million in 1959 had an epidemic of 6,198 reported cases, and 20 strains of poliovirus that were isolated during the epidemic were all reported to be Type 2. Extensive Type 2 epidemics were also reported in China in 1959.

In the United States, Canada and similar countries, where Salk vaccine has been extensively used since 1955, the incidence of paralytic poliomyelitis has been decreasing over the years, but not without epidemic upsurges. Thus in 1959, there were about 6,200 cases of the paralytic disease in the U. S. A. and 1,850 in Canada, which has a population of only about 18 million. The very low incidence of poliomyelitis in the U. S. A. and Canada in 1961 has been interpreted by some as evidence that the killed virus vaccine was breaking the chain transmission of polioviruses, and has led to predictions that poliomyelitis will disappear without any new mass campaigns of immunization. However, it is well known that years of high poliomyelitis incidence, such as occured in 1959, are followed by years of low incidence, until enough children with susceptible intestinal tracts have been added to the population again to permit the extensive spread of epidemic Type 1 strains. In the pre-vaccine era, it was shown that the Type 1 virus was less common and the other types more common as a cause of paralytic disease during the years following large epidemics—a phenomenon which is now being interpreted by some people as indicating that more extensive use of killed virus vaccine is eliminating Type 1 virus from circulation. As a

matter of fact several years of very low incidence must serve as a danger signal for future epidemics, if the immune status of the population is not maintained. Serologic surveys, such as have recently been carried out in New Haven and Middletown, Conn and in Cincinnati, Ohio prior to the use of oral vaccine, have indicated that among the youngest children under two years of age the proportion without Type 1 antibody is high even among those who have had three doses of Salk vaccine of recent manufacture. This is the background of current deliberations in the U. S. A. and certain other countries about the procedures to be used for the elimination of the disease.

— *Sabin A. B. from a paper presented to Royal Society of Health, London on 1—2—1962.*

* * * *

SERUM LIPIDS AND CORONARY DISEASE :

Interest in the serum lipids in relation to arterial disease is based on the fact that cholesterol, phospholipids, and lipoproteins are all present in serum and also in the atheromatous lesions of arterial disease. It seems that these substances present in the lesions must have been brought and deposited there by the blood. Two particular types of lipid have been studied in this respect : cholesterol and the low density lipoproteins.

Cholesterol :

The evidence for regarding cholesterol as a factor in the genesis of atheroma is threefold.

1. Arterial disease is commoner and more severe in patients with diseases associated with a high serum cholesterol, such as diabetes and essential xanthomatosis.

2. In illnesses causing severe wasting, such as inoperable malignant disease, the serum cholesterol tends to fall to a low level. At autopsy, arterial disease is often not very marked, almost as if regression of arterial lesions occurs when there is marked wasting with lowering of the serum.

3. Atheroma can be induced in laboratory animals by high cholesterol diets.

However, there are certain points against a clear-cut relationship between cholesterol and atheroma. While it is true that atheroma is commoner among people with high cholesterol levels, the converse is not true. If one takes a group of people with clinical evidence of arterial disease (angina, claudication, or a cerebral vascular accident), their cholesterol levels on the whole are not greater than in people of similar age without such symptoms. These symptoms are due to thrombotic occlusion of the diseased vessels. This is where the analogy between cholesterol-induced atheroma in laboratory animals and the disease as seen in humans breaks down, because animal atheroma is not a thrombotic disease. In man, the effects of

atheroma are important only in so far as thrombotic occlusion causes symptoms. The problem in man, therefore, is not so much one of arterial atheroma as of arterial occlusion.

Lipoproteins:

The role of the lipoproteins is not clear-cut either. It is true that the low-density lipids are found in greater concentration in those with coronary disease compared with healthy people, but this finding is not restricted to coronary disease. Studies suggest that the rise in lipoprotein follows the onset of coronary disease rather than being present beforehand as a pre-existing and causal factor. Furthermore, serial studies of the lipoproteins in a group of hospital patients suffering from a number of different diseases of non-cardiac origin has shown that the lipids tend to be high when such people are ill, and to become lower once they recover. It would, therefore, appear that alterations in the low-density fraction of the serum lipids are part of a non-specific metabolic disturbance associated with ill-health in general and are not specifically related to arterial disease.

Therapy:

Attempts to alter the serum lipids in order to improve arterial disease have been based on dietetic measures and on drugs.

Dietetic Measures: The use of diet for the control of arterial disease is based on the observation that such disease is uncommon among people who live on diets low in animal fat. For example, the South Italian peasants' diet consists largely of carbohydrates in the form of pasta, and of fish, fruit and vegetables; fat is taken as olive oil rather than as butter or milk. Hence, diets have been devised which basically avoid milk, butter, meat, fat, cheese and eggs. Maize oil (corn oil) is provided instead for cooking and substitutes for cheese and margarine are made from this. Some authorities consider that such vegetable oils contain lipid substances (so-called EFA or essential fatty acids) which exert a protective action against atheromatous deposits.

To our taste, such diets are very artificial and unpalatable; and it may be that the disappointing results that have followed their use are, perhaps, partly due to the fact that patients do not keep to them. The results are, in fact, disappointing: cholesterol levels have not been strikingly or consistently lowered and, even when they have been, clinical evidence of improvement in the patient's symptoms has not been obvious. The fact that cholesterol levels do not show much change is mainly due to cholesterol intake in food being only one of the sources of body cholesterol. Some (probably the greater part) is manufactured by our own chemical processes, i.e. most of our body cholesterol comes from biosynthesis. Weight reduction alone is accompanied by a fall of cholesterol, as already mentioned earlier when discussing the effects of wasting disease.

Drugs: Substances which have been used to alter cholesterol metabolism are: thyroid derivatives, nicotinic acid, heparin and heparin-like substances, and œstrogens.

None of these has produced any consistent results so far as lowering cholesterol is concerned. All of them have produced small or temporary falls only in a varying percentage of patients. Beneficial clinical effects have hardly been evident at all. It may, perhaps, be that one can temporarily influence natural biochemical processes, but that subsequently such processes continue by another chemical route.

To sum up, it seems fair to say that at the present stage of our knowledge concerning serum lipids and coronary disease, it is not justifiable to place any patients on a regime of diet or drugs which they find difficult or unpleasant. The only measure of proven value in this respect is reduction of weight in the obese patient.

— *D. Weitzman, MD, MRCP : 'The Chest and Heart Bulletin'. December, 1962 pages, 172 & 173.*

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OTORRHOEA IN THE CAUSATION AND PROGNOSIS OF TETANUS IN PAEDIATRIC PRACTICE

53 cases of tetanus in children were admitted to the G. T. Hospital, Bombay between March 1958 and December, 1959. Of these, 12 were neonates who had umbilical sepsis as the cause of tetanus. Of the 53, 60·9% showed or gave history of ear discharge in the recent past. Out of the 10 cases which had ear discharge on admission, 9 showed viable tetanus bacilli and spores on cultural examination of the discharge. It is felt that a discharging ear in paediatric practice should not be passed over with complacency. A course of tetanus toxoid should prove immensely helpful in these children.

— *C.S. Wagle, Ind. J. Med. Sciences, 17, 157–159 (1963).*

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SINGLE-DOSE TREATMENT OF OXYURIASIS WITH PYRVINIUM EMBONATE.

Adults and children attending St. George's Hospital, Bombay were selected for this study. For diagnosis and test of cure, the Scotch-tape test (modified Graham technique) was carried out. The dose of pyrvinium (Vanguin P.D. & Co.) was given (5mg. / kg. of body weight) as tablets to adults and as suspension to children of 150 patients, ranging in age from $2\frac{1}{2}$ to 54 years, treated with this drug, 98% were cured by a single dose. Side-effects were transient and consisted of nausea, vomiting and mild diarrhoea. These side-effects occurred in only 6 of the 150 cases and then only in those who received relatively large volumes of the suspension. The drug was completely non-toxic when given in tablet form. It represents a great improvement on the drugs used in the treatment of thread (pin) worms.

— *A. S. Desai, British Medical Journal, Dec. 15, 1962, 1583-1585.*

ASSOCIATION NOTES

BRANCH NOTES

Coimbatore Branch:

A monthly meeting of the Coimbatore District Medical Association was held on 9th December, 1962 in the association premises at 4 p. m.

Dr. Rangacharyalu, Vice-President of the I. M. A., Centre addressed the members on the activities of the I. M. A. He impressed on the audience the need to enlist every qualified doctor in the I. M. A. and make this body a powerful and only representative organisation to safeguard the interests of the profession. He requested the members to volunteer to serve in the forces sooner before the State taking measures to compulsorily enlist them. He paid tribute to the members of our branch for their contribution to the Defence Fund. Dr. Mrs. Anna Vareed, the president in her remarks narrated the measures the Coimbatore branch took in collecting contributions to the Defence Fund, and the response from members to join the training scheme in anaesthesia, blood transfusion, etc.

Dr. S. V. Subramaniam, M. B., B. S., T. D. D., and Dr. C. Nanjappa, L. M. P., were the hosts of the day. The meeting terminated at 6 P. M. with a vote of thanks by the honorary secretary.

Madurai Branch:

Annual Meeting

The 35th annual conference of the Madura Medical Association was held on Sunday, the 10th February 1963 under the presidentship of Dr. N. Suryanarayanan, L. M. P., Madurai. The honorary secretary, Dr. D. R. Rajaram read the annual report for the year 1962—'63. Dr. A. Arunachalam, honorary treasurer read the auditor's report, statement of accounts for the year 1962. The following members were elected as office-bearers for the year 1963—'64:

Dr. N. Suryanarayanan, L. M. P. — President
Dr. T. Thirugnanam, M. B., B. S. — Vice-President
Dr. D. R. Rajaram, M. B., B. S. — Honorary Secretary
Dr. K. Gopal, M. B., B. S., T.D.D. — Honorary Treasurer

The following resolutions were passed unanimously:

1. This annual conference resolves to request the State Government to kindly send a copy of all Government orders pertaining to medical and public health topics to each district medical association.

2. This annual conference resolves to request the State Government to sanction a special allowance of Rs. 50/- plus Rs. 50/- for leprosy work and compensatory rural allowance to all the panchayat union medical officers as is allowed for the State medical personnel.

3. This annual conference resolves to record their deep regret for not complying to the recommendations of the Health Survey and Planning Commission of the Central Government regarding the age of retirement of medical officers from 55 to 58 and resolves to request once again to revise the age of retirement to at least 58, if not 60, as is done and commended for adoption of the State Government very recently by the Central Government.

4. This annual conference resolves to request the Ramakrishna Mission authorities to sponsor at least 5 candidates every year from their own funds for the M. B., B. S. course to form a nucleus of an Indian Medical Mission.

5. This annual conference resolves to request all the members of the association to give free treatment compatible with the facilities available with them to the near relatives as parents, wife and children of the military personnel for the duration of the emergency and further requests to contribute one day's income of the respective members to the National Defence Fund.

6. This annual conference resolves to heartily thank the Central Government for conferring the title of 'Padma Vibooshan' on Dr. Sir A. Lakshmanasami Mudaliar, our grand veteran and resolves to convey our heartiest congratulations to our popular and eminent Vice-Chancellor.

7. This annual conference resolves to request the State Government and the University grants commission to start a neuro-surgical unit at the Madurai Medical College with 16 beds from the new academic year or as early as possible.

Dr. P. Narendran, M. B., F. R. C. S. (Edin), F. R. C. S. (Eng.), Neuro-Surgeon, Government Stanley Hospital, Madras gave an interesting lecture on 'Stereotactic Surgery in Neuro-Surgical Disorders'.

Dr. A. J. Selvapandian, M. S., Department of Orthopaedics, Christian Medical College Hospital, Vellore gave an interesting lecture on 'Volkman's Ischaemic Contracture—Etiology and Management'.

Dr. V. Srinivasan, M. R. C. P., D. T. M. & H., Professor of Therapeutics, Madurai Medical College, Honorary Physician, Erskine Hospital, Madurai, Dr. M. Thangavelu, M.D., Principal, Medical College, Trivandrum and Dr. R. Sarat Chandra, M. S., F. R. C. S. (Eng.), F. R. C. S. (Edin), Professor of Surgery, Kilpauk Medical College, Surgeon Royapettah Hospital, Madras talked on the various aspects in a symposium on 'Diseases of the Thyroid'.

Dr. K. V. Thiruvengadam, B. Sc., M. D., Professor of Clinical Medicine, Stanley Medical College and Physician, Government Stanley Hospital, Madras gave an interesting lecture on 'Respiratory Allergy in Clinical Practice'.

Dr. Mary Rajarathnam, M.D., D.G.O., Additional Reader in Obstetrics and Gynæcology, Madurai Medical College, Madurai gave an interesting lecture on 'Early Diagnosis of Cancer Cervix and Body of Uterus'.

Dr. O. L. Wade, Professor of Therapeutics, Dr. John Permberton, Professor of Social and Preventive Medicine and Dr. Collins, Clinical Pathologist, Belfast, of the W. H. O. team addressed the members and took part in the discussions.

The secretary proposed a vote of thanks and thanked M/s. The South Indian Manufacturing Company, Madurai for the nice lunch given.

Nilgiris Branch:

1. The monthly meeting of the association was held on Saturday, 12th January 1963 in the newly constructed recreation hall for the patients at the Govt. Headquarters Hospital, Ootacamund, Dr. P. V. Kurian presiding. Dr. G. M. Vali Mohideen M.B.,B.S., T.D.D., of the Government Headquarters Hospital,

Ootacamund spoke on the 'Control of Tuberculosis'. After describing the various routes through which the tubercle bacillus entered the human body, he differentiated the different clinical manifestations of tuberculosis infection and disease. He explained why a combined chemotherapeutic regimen was necessary and indicated the toxic signs that may appear. Viewing the community as a whole, he described the various public health measures now employed. As a result of the BCG campaign, tubercular meningitis and miliary tuberculosis tended to disappear. This talk was followed by two excellent films on the treatment of tuberculosis kindly supplied by M/s. Squibb Sarabhai Ltd. The arrangements made by Dr. Kuruvilla, District Medical Officer, Nilgiris were very much appreciated.

2. A special meeting of the association was held on Thursday, the 24th January 1963 at the Pasteur Institute, Dr. A. B. Sabin, of the Children's Hospital Research Foundation, University of Cincinnati, Ohio, U.S.A. addressed the members and other guests on the value of polio vaccine. Even though poliovirus co-existed with humanity for ages, in this century and specially after the second world war, the disease had broken out in an epidemic form in many parts of the world. Epidemic poliomyelitis was not confined to areas with high sanitary standards. He went on to explain how oral polio vaccine with selected strains of the three types of poliovirus increased the resistance of the intestinal mucosa against the onslaught of wild poliovirus and prevented paralytic polio. With the aid of slides he described the conditions required for selecting the strains of poliovirus for oral administration. He pointed out the various places in different parts of the world where oral vaccine has been used for the eradication of polio. He described in detail the investigations carried out in a town in Mexico, where in spite of other enteric viruses, oral vaccine proved to be a great success. The meeting ended with a vote of thanks to Dr. Sabin for his excellent exposition on the superiority of oral polio vaccine.

Ramanathapuram Branch:

An ordinary meeting of the Ramnad District Branch, I.M.A. was held on Sunday, the 24th February 1963 at 5 P. M. at the 'Kamak Hall', Sivakasi. Dr. S. Raju Ayyar presided over the function. Dr. A. Venkoba Rao, M. D., D.P.M., F.I.P.S., Reader in Psychiatry, Madurai Medical College, Madurai gave a very good lecture on 'Some Aspects of Childhood Psychosomatics'. He also answered a few questions put by the members. Then Dr. Mrs. Parvathy Devi, M B. B.S., M.SC., Professor of Physiology, Madurai Medical College, Madurai talked on 'Physiology of Sleep'. The meeting came to an end with a vote of thanks by the secretary.

Salem Branch:

1. An ordinary meeting of the Indian Medical Association, Salem branch was held at 6 P. M. on Sunday, the 27th January 1963 at 'Hotel Dwaraka', Salem-4.

Dr. N. Madanagopal, M. D., M. R. C. P., Erskine Hospital, Madurai gave an interesting lecture on 'Dyspepsia in Clinical Practice'. There was a discussion at the end of the lecture.

The meeting terminated with the vote of thanks proposed by the secretary Dr. Kumari B. Mukambu.

Annual Meeting.

2. The annual day of the Indian Medical Association, Salem branch was celebrated on Sunday, the 24th February 1963 at Hotel Dwaraka, Salem. Dr. K. Jayaramachandran presided.

The meeting commenced at 9-30 A. M. After the introduction of the lecturers by the president, there was a symposium on 'Low Back Ache'.

Dr. C. H. Sivaraman, M. B., B. S., M. R. C. P. (Edin.), D. T. M. & H., Divisional Medical Officer, Southern Railway, Olavakkot spoke on the medical aspect, Dr. (Mrs.) Kamalamma Balakrishnan, M. D. (Midwifery), M. R. C. O. G., Women and Children's Hospital, Egmore, Madras spoke on the gynaecological aspect and Dr P. Narendran, M. B., B. S., F. R. C. S. (Edin.), F. R. C. S. (Eng.), Neuro-Surgeon, Stanley Medical College, Madras spoke on the neuro-surgical aspect and demonstrated a few slides.

After the symposium there was a discussion.

Then the annual report was read by the honorary secretary, Dr. (Kumari) B. Mukambu.

At 1-00 P. M. there was a buffet lunch by the kind courtesy of M/s. Rallis India Ltd., (T. C. F.), Madras.

The evening session started with the business meeting at 4 P. M.

After the reading of the minutes of the previous meeting by the secretary, the audited statement of accounts was circulated and adopted.

The following were elected as office-bearers unanimously for the year 1963—'64:

President	:	Dr. K. Jayaramachandran, M. B., B. S.
Vice-President	:	Dr. K. Mahadevan, M. B., B. S., L. O.
Honorary Secretary	:	Dr. (Kumari) B. Mukambu, M. B., B. S.
Hony. Joint Secretary	:	Dr. C. Nachiappan, M. B., B. S.

State Council Members.

1. Dr. T. S. Shanmugasundaram.
2. Dr. J. Sugavanam, M. B., B. S., D. L. O.
3. Dr. S. R. Rajaram, M. B., B. S.

Central Council Members.

1. Dr. K. R. Hariharan, L. M. & S., D. T. M. & H.
2. Alternative Member: Dr. K. C. Roy, M. B., B. S.

Treasurer	:	Dr. K. V. Dhanakoti Naidu, L. M. & S.
Auditor	:	Dr. S. Valeeswaran, M. B., B. S., L. O.

Executive Committee Members.

1. Dr. U. B. Lakshmi
2. Dr. J. Sugavanam
3. Dr. Mari Chetty
4. Dr. C. S. Ramaswamy
5. Dr. K. G. Gurubatham

A resolution was adopted to re-constitute the building committee and to take active measures for putting up the building for Indian Medical Association, Salem Branch. One more member gave his name for donation of blood to jawans.

At 4-30 P. M. Dr. E. Balakrishnan M.B.,B.S., M.S., D.O., Assistant Professor of Ophthamology spoke on 'the useful ophthalmic signs in general practice' and demonstrated some slides.

The tea was provided by the kind courtesy of M/s. Sandoz (India) Ltd., Madras. During tea, there were a few games and a prize was awarded to the winner.

After tea, there was an entertaining lecture by Dr. C. S. Kamalapathy, M. A. Professor of English, Jamal Mohammed College, Trichy on 'Shakespeare and Medicine'. A book 'Quotations from Shakespeare' was presented to the lecturer by the association.

After this, there was a film show by M/s. Sandoz (India) Ltd., Madras on (1) Cine Radiography and (2) The Emphysematous Patient.

After the vote of thanks, the meeting concluded with a dinner by the kind courtesy of M/s. Standard Pharmaceuticals Ltd., Calcutta.

The reception, accommodation, etc., was by the kind courtesy of M/s. M. A. C. Margarets Pharma Labs., Madras.

60 members out of 86 were present. 5 speakers and 9 guests were also present. Thus came to an end a very entertaining, educative and well organised day.

THE 39th ALL INDIA MEDICAL CONFERENCE

Further to my announcement on the subject appearing on page 172 of the Madras Clinical Journal, January 1963, (Vol. XXIX No. 7), I wish to inform you that, in accordance with the Rules and Bye-laws of the I. M. A. Head-quarters and in consonance with the usage and convention established so far, the 39th All India Medical Conference, 1963, will be held in Madras City under the auspices of the MADRAS CITY BRANCH of the I. M. A. This important decision has been taken at the meeting of the Executive Committee of the Madras City Branch of I. M. A. held on 30—1—1963 at which I was present and addressed the members on the subject. The Madras City Branch of I. M. A. is making rapid progress to form the Organising Committee and to elect the requisite office-bearers for the successful conduct of the conference. As mentioned in my previous announcement, the valuable help and co-operation of all the local branches of I. M. A. in the State and their members is absolutely necessary to make the conference a grand success; and I am sure that you will all give the same to the Madras City Branch—the host branch and help the cause. The hony. secretary of the Madras City Branch of I. M. A. may be contacted for all further particulars relating to the conference.

C. Nathamuni Naidu,
President, Madras State Branch of I. M. A.

NEWS AND NOTES

UNICHEM PROCURES INDUSTRIAL LICENCE FOR MANUFACTURING "THIACETAZONE"

Unichem Laboratories have received the industrial licence for manufacture of Thiacetazone, the anti - tubercular drug.

The trial by Tuberculosis Committee of the British Medical Research Council in Africa has shown this drug as highly promising, economical and convenient substitute of long used paramino salicylic acid (150 mg. of Thiacetazone gives results equivalent to that with 10 gm. of PAS).

Importing the chemical, Unichem has started extensive trials in various hospitals in India. Having received this industrial licence, they will soon start the basic manufacture of this chemical and launch a comprehensive economical production for tuberculosis treatment.

THE 11th MADRAS STATE OPHTHALMIC CONFERENCE 1963

The Eleventh Annual Conference of the Madras State Ophthalmic Association will be held on the 2nd Saturday and Sunday of August 1963 at the Trichy Medical Association Buildings, Tiruchirapalli. Eminent doctors from the states of Bombay, Andhra, Mysore and Kerala are expected to participate in the conference.

A souvenir containing useful articles, abstracts, and case notes will be published on the occasion. Doctors wishing to contribute articles, case notes, abstracts, etc. for the souvenir are requested to contact the undersigned.

Advertisers are requested to send their advertisement materials well in advance to the undersigned.

Those ophthalmologists who have not yet become members of this association are requested to contact the treasurer, Dr. A. A. Sathar, L. O., 218, West Masi St., Madurai or the undersigned and become members of the association.

For further particulars please contact the Secretary, The 11th Annual Conference of the Madras State Ophthalmic Association, 48, Puthur High Road, Tiruchirapalli - 1.

T. V. Ranganathan,
Secretary.

MADRAS MEDICAL COUNCIL.

Ref: Letter No. 8-2/62—PH III dated 11th April 1962 of the Director-General of Health Services, New Delhi.

I am directed to state that the letter of the Director-General of Health Services was placed before the Madras Medical Council at the meeting held on 17th December 1962. The Council after considering the same approved the following resolution of the Executive Committee :—

Resolution of the Ex. Committee.

"As the Medical Council has not got sufficient funds to issue instructions to each registered medical practitioner, the Registrar should give publicity to the letter of the Director-General of Health Services by having it published in medical journals with a covering letter. He should also request the Indian Medical Association to give publicity to the letter".

As per the resolution of the Council, I am forwarding herewith a copy of the letter of the Director-General of Health Services, referred to above for publication in your esteemed journal for information of medical profession, along with this covering letter.

Copy of the letter.

Dear Sir,

It has come to our notice that on several occassions passengers from India with valid international certificates against smallpox have developed the disease in foreign countries and initiated epidemics of smallpox in those countries. These cases not only bring a bad name to our country but also lower the reputation of our medical profession. Such incidents can occur when due care is not exercised by medical men to use proper vaccine and take common precautionary measures. They also point to a certain amount of laxity on the part of stamp holders not at all consistent with the trust and responsibility reposed in them by the Government of India. This is viewed with great concern and it is requested that all medical practitioners in your state may kindly be impressed upon the necessity of ensuring that a vaccination certificate is issued only after the full ritual of proper vaccination with fresh vaccine is observed.

2nd ALL INDIA CANCER CONFERENCE

The 2nd All India Cancer Conference will be held in Madras from January 2nd to 5th, 1964. Enquiries regarding scientific papers, delegates forms or any other information may be had from—

The Secretary-General,
2nd All India Cancer Conference,
Cancer Institute, Madras - 20.

REVIEW

Index — Therapeutic 1962 — Edition: Published by Messers. Restomji Cooverji & Co., Bombay, Pp. 336 — 56 — Price Rs. 12—50.

This book is a treasury of useful information on a large number of proprietory products available in India. The various proprietory drugs are intelligently classified and alternative groups of drugs in relation to particular diseases are also given. As such this book will be quite handy to the busy practitioner to select his choice of proprietory preparation from the numerous allied products that are being marketed every day.

Literature and handouts on new preparations by pharmaceutical firms form the bulk of the doctor's mail bag these days and a compilation of the available drugs in one book and the wise classification of the diseases and drugs is sure to be welcomed by the profession.

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The Journal of the Physicians' Association of Madras: Vol. I — No. 1 December 1962 — Half yearly—Price Rs. 2—00 — Annual Subscription Rs. 3—50 — 52, Main Road, Madras—13.

We welcome the Journal of the Physicians' Association of Madras into our fold of medical journalism in our State. No apology is needed to bring out such an exceptionally useful publication as this new journal. The number of medical journals published from our State are comparatively fewer than those published from certain other sister States in our country. The journal is the official organ of the Physicians' Association of Madras and as such it contains exclusively papers presented at their monthly meetings. The papers published in this inaugural issue are all of a uniformly high standard and fulfils the hope of the editor that it will be useful to the post-graduate and to the practitioner. We join with the editor in anticipating a quarterly or even a monthly publication of this useful journal in the very near future.

—A. G. L.

NATIONAL DEFENCE FUND — DONATIONS

The Honorary State Secretary, Madras State Branch of I. M. A. gratefully acknowledges the receipt of the following contributions to the National Defence Fund:

Coimbatore Branch

		Rs.	nP.
Dr. C. V. Ramaraj,	Coimbatore ...	75	00
Dr. A. G. Leelakrishnan,	do. ...	20	00
Dr. S. D. Jog,	do. ...	20	00
Dr. Mrs. Anna Vareed,	do. ...	20	00
Dr. C. Arumugam,	do. ...	10	00
Dr. C. B. S. Mani,	do. ...	10	00
Dr. S. V. Subramaniam,	do. ...	10	00
Dr. S. N. Iyer,	do. ...	10	00
Dr. V. Sriramulu,	do. ...	10	00
Dr. S. V. Swarnambal,	do. ...	10	00

Salem Branch

Dr. R. Balachandran, Salem	...	10	00
Dr. S. Sundaram, Salem	...	10	00

Madras City Branch

Dr. L. N. Anantaraman, T. Nagar	...	30	00

South Arcot Branch

Dr. L. Rajaram, Villupuram	...	101	00
Dr. S. Bhuvarahamurthy, Cuddalore, N. T.	...	75	00
Dr. K. G. Sadagopa Iyengar, Nellikuppam	...	50	00
Dr. K. S. Krishnagopal, Nellikuppam	...	50	00
Dr. C. Seshachalam Naidu, Cuddalore N. T.	...	25	00
Dr. N. Rajamanickam, Cuddalore N. T.	...	20	00
Dr. A. M. Khan, Cuddalore N. T.	...	10	00
Dr. S. N. Ganapathi, Cuddalore N. T. (D. M. O.)		10	00
	Total ...	586	00